

Cooking School



“THE RAW REWARD”

Phytochemicals,
Antioxidants &
You



Why is it so good for you?



Benefits of raw food



<http://www.livestrong.com>

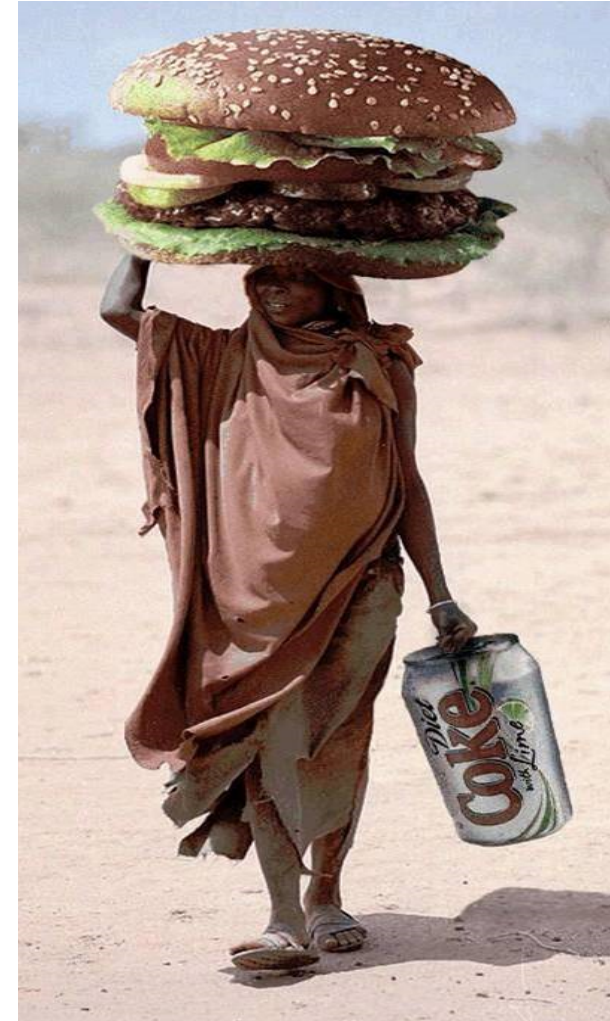
- ❑ Healing
- ❑ Heals receptor sites
- ❑ Starves Cancer cells
- ❑ Improves digestion
- ❑ Alkaline
- ❑ Weight reduction (less calories)
- ❑ Mental health
- ❑ Gives us nutrients and vitamins

SAD consists of highly refined, nutrient deficient foods



We even export SAD

- ❑ Various population groups around the world following a plant-based diet tend to have strikingly low cancer rates.
- ❑ When these populations trade their traditional diets for Western foods, cancer rates, diabetes and other diseases promptly began to rise.



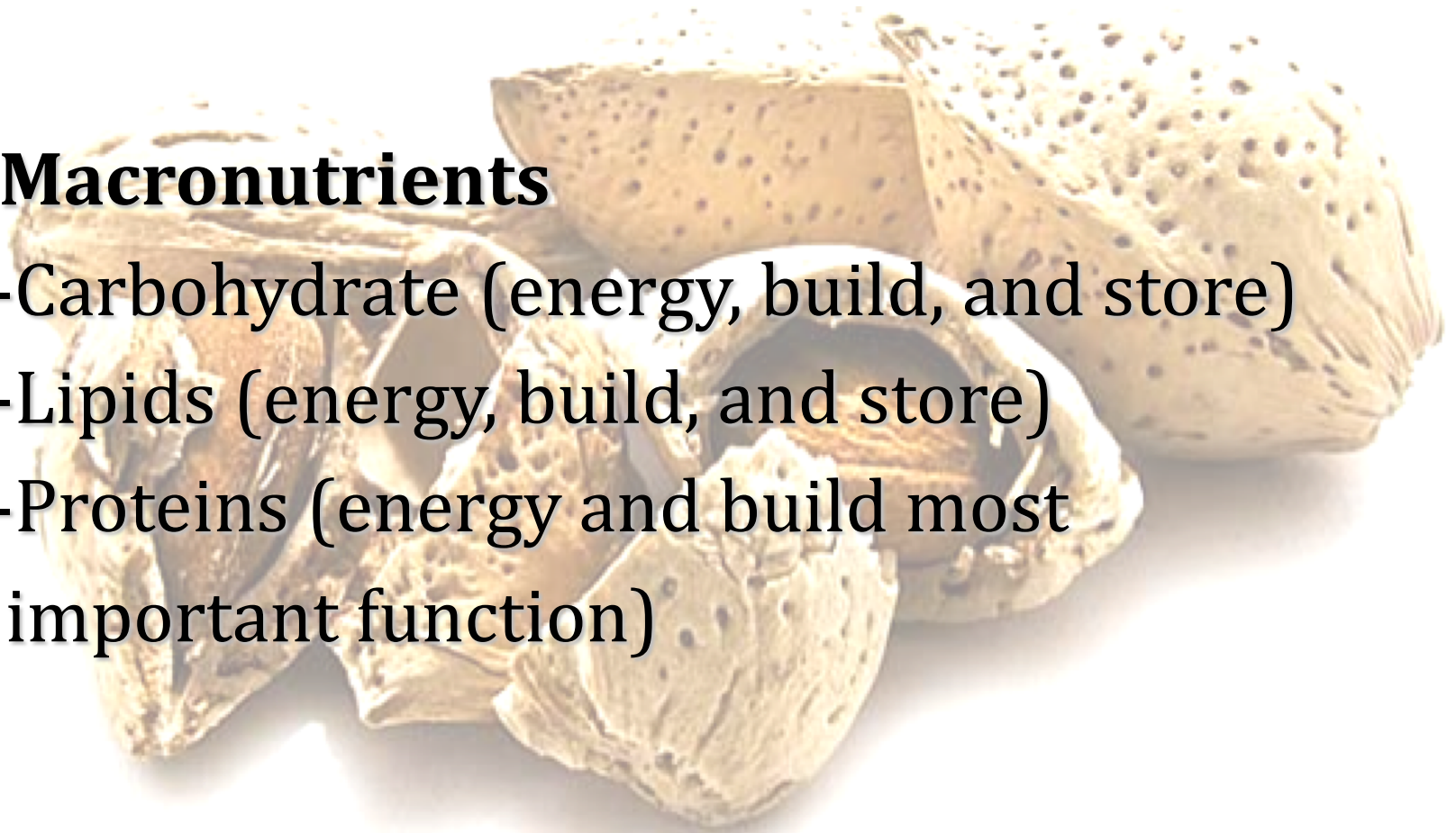
But, there is a Solution!



How?

□ **Macronutrients**

- Carbohydrate (energy, build, and store)
- Lipids (energy, build, and store)
- Proteins (energy and build most important function)



□ Micronutrients

- Vitamins

- Minerals



- Over than 200 major scientific studies over the past 25 years, have consistently shown that those who eat largely of plant foods...



- ...are about **half** as likely to experience cancer as those who eat few plant foods.

The Director of the National Cancer Institute's division of Cancer Prevention and Control, as reported in Better Nutrition, May 1994, p. 20





- Plant foods loaded with phytochemicals and antioxidants do much more than help **PREVENT** disease, they also **FIGHT** it!

A Bloch, CA Thomson. Position of The American Dietetic Association: phytochemicals and functional foods. *J Am Diet Assoc* 1995;95:493-96.

Antioxidants

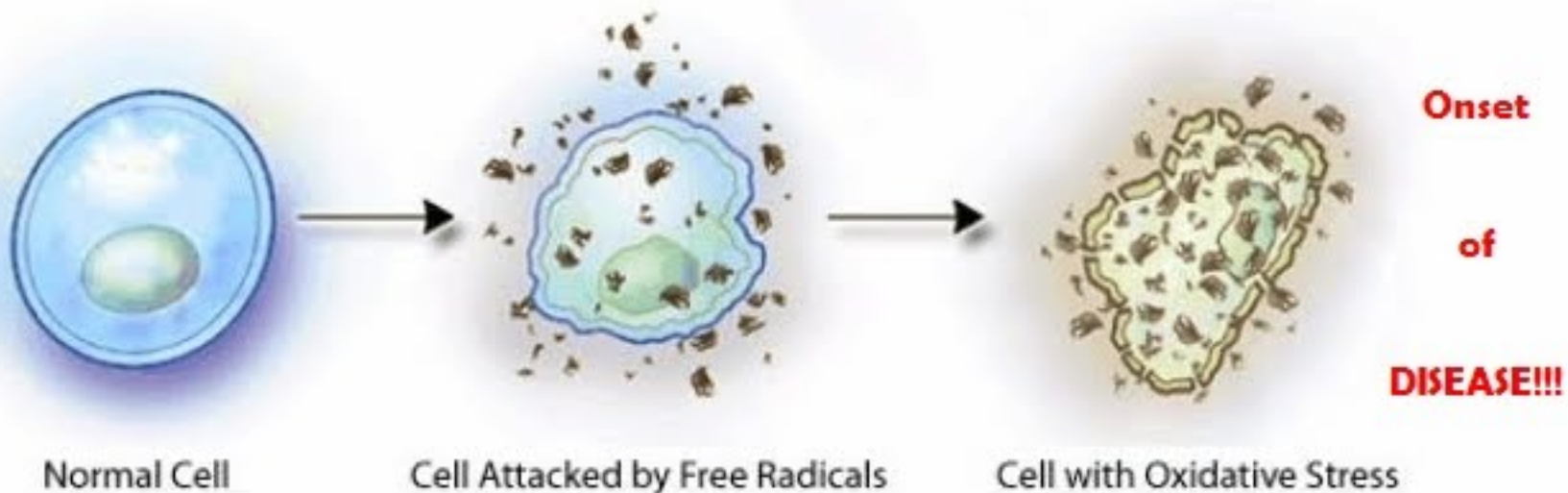
“Antioxidants are substances that may protect your cells against the effects of free radicals.”

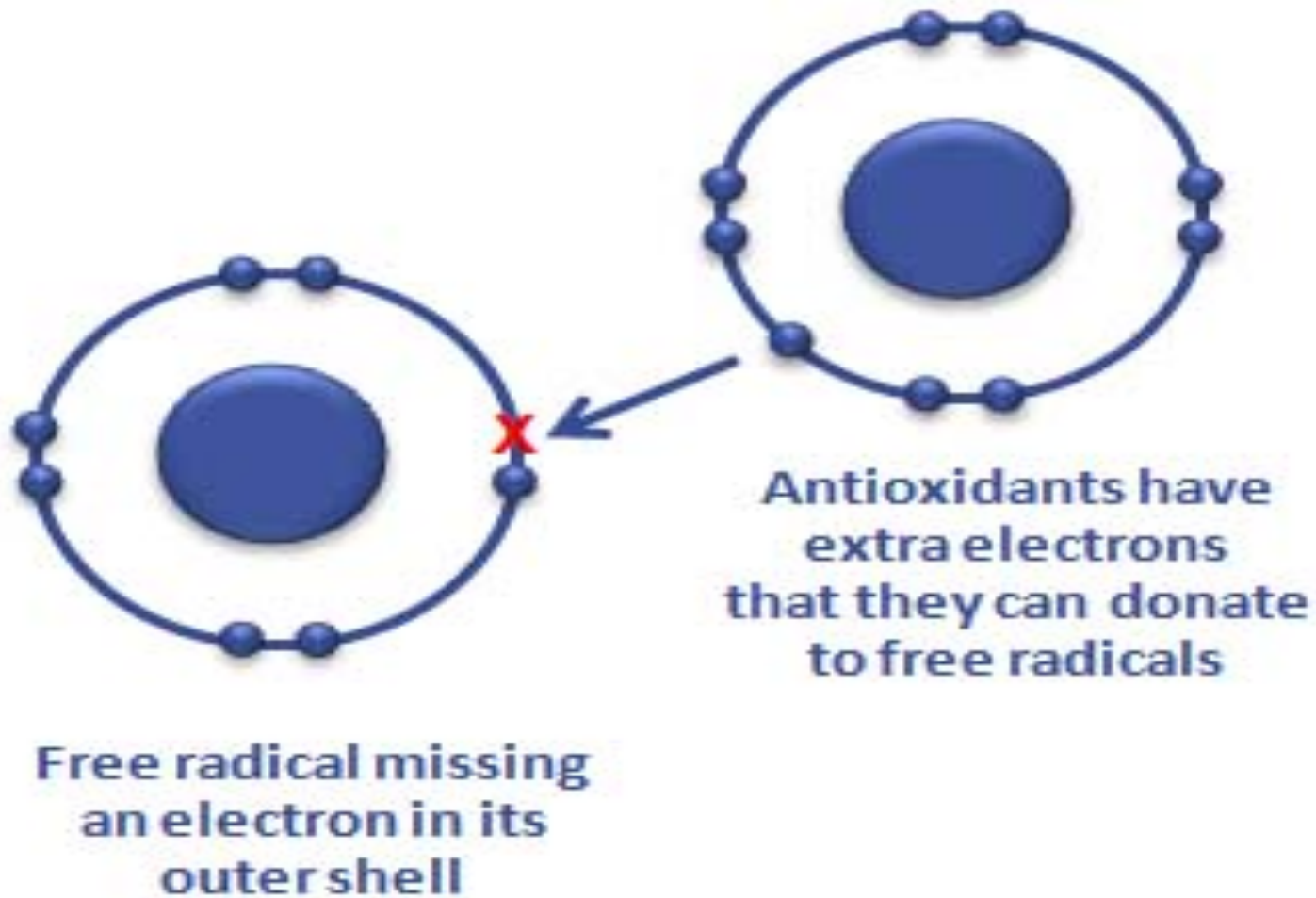
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Free Radicals

Free radicals are highly reactive and they act by seizing away electrons from stable molecules, causing damage to cell membranes, cell nucleus, and the cell DNA they contain.



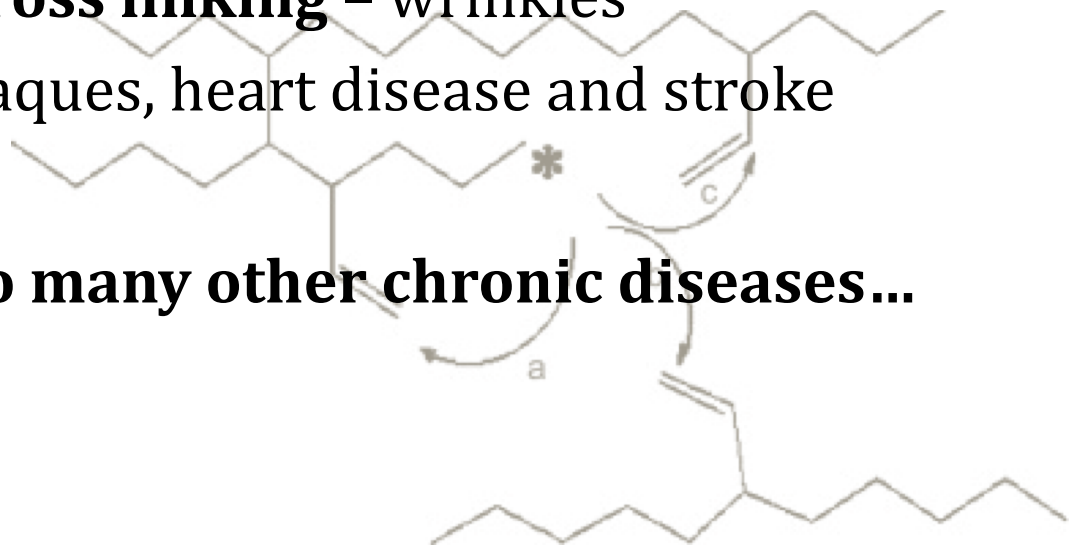


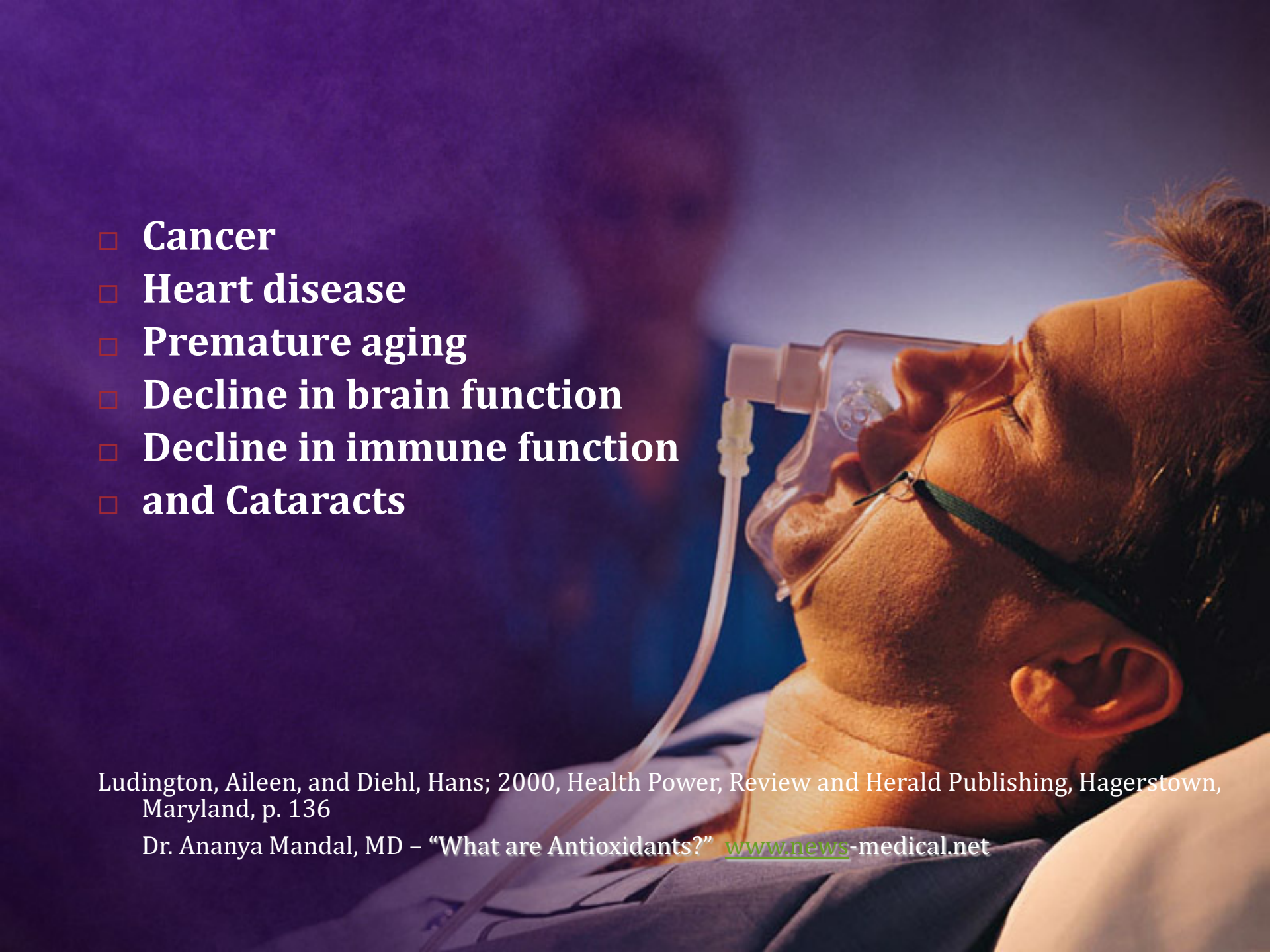
Free radicals and cross-linking

The chain reaction caused by free radicals can lead to cross-linking of atomic structures.

- ❑ **DNA cross linking**- aging and cancer
- ❑ **Fat and protein cross linking** – wrinkles
- ❑ **Oxidized LDL** - plaques, heart disease and stroke

Free radicals lead to many other chronic diseases...



- 
- A close-up, low-angle shot of a man lying in a hospital bed. He is wearing a clear nasal cannula connected to a tube. His eyes are closed, and he appears to be resting or sleeping. The lighting is warm and focused on his face, with a blurred background showing a medical professional in a blue uniform.
- ❑ **Cancer**
 - ❑ **Heart disease**
 - ❑ **Premature aging**
 - ❑ **Decline in brain function**
 - ❑ **Decline in immune function**
 - ❑ **and Cataracts**

Ludington, Aileen, and Diehl, Hans; 2000, Health Power, Review and Herald Publishing, Hagerstown, Maryland, p. 136

Dr. Ananya Mandal, MD – “What are Antioxidants?” www.news-medical.net

Sources of free radicals

- ❑ Cigarette smoke - 100 trillion free radicals in each puff
- ❑ Stress
- ❑ Foods with fats and additives
- ❑ Alcohol
- ❑ Water and air pollutants
- ❑ High intensity exercises
- ❑ Heating oils (frying)
- ❑ Own metabolic process
- ❑ ...





Because free radicals cannot be entirely avoided, it is important to strengthen our body's antioxidant defenses.

Beta-Carotene

- ❑ One of the best known antioxidants
- ❑ The yellow - orange pigment found in carrots, yams, cantaloupes, kale
- ❑ Provides vitamin A for good vision
- ❑ Enters the cell membrane and waits there to fend off free radicals that might approach



Beta-Carotene



Cantaloupe (1 cup)	3 mg
Carrot (1 large)	16 mg
Kale (1 cup)	4 mg
Mango (1 cup)	4 mg
Pumpkin (1 cup)	32 mg
Yam (1 cup)	26 mg

Lycopene

- Lycopene is a carotenoid - a family of pigments that give fruits and vegetables their brilliant red, orange, and yellow coloring.
- Lycopene is also a powerful antioxidant that eliminates dangerous free radicals that can damage DNA and other fragile cell structures.



Lycopene

- A study from Harvard shows that a diet rich in lycopene-containing foods may help lower the risk of prostate and other cancers.
- A report published in the journal Neurology linked lycopene levels in the blood to stroke protection. 55% lower chance of having any kind of stroke.
- The lycopene connection was even stronger (59%) when it came to protect against strokes due to blood clots (the most common kind).

Lycopene



Pink Grapefruit (1)	10 mg
Tomato (1 med, raw)	4 mg
Tomato Juice (1 cup)	25 mg
Tomato Ketchup (1 Tbs)	3 mg
Spaghetti Sauce (1 cup)	56 mg
Watermelon (1 slice, 368 g)	16 mg

Vitamin E

- ❑ Protects each cell's outer membrane from free radical attacks.
- ❑ Is found in legumes, whole grains, and plants rich in natural oils (e.g. nuts, seeds).
- ❑ Is the most abundant fat-soluble antioxidant in the body.



Vitamin E



	Quantity	Vitamin E
Dry roasted sunflower seeds	1 ounce	7.4 mg
Dry roasted almonds	1 ounce	6.8 mg
Dry roasted hazelnuts	1 ounce	4.3 mg
Dry roasted peanuts	1 ounce	2.2 mg
Spinach, boiled	½ cup	1.9 mg
Broccoli, chopped and boiled	½ cup	1.2 mg
Kiwifruit	1 medium	1.1 mg
Mango, sliced	½ cup	0.7 mg
Tomato, raw	1 medium	0.7 mg

The **RDA** for ages 14 and up = 15 mg

Selenium

- ❑ Reduces the risk for certain cancers, including skin, lung and prostate cancer, because of its antioxidant properties.
- ❑ Reduces the risk for heart disease.
- ❑ Reduces the risk for diabetes.



Selenium

□ **Good sources:**

- ▣ Brazil nuts (2/day provide daily values for selenium)
- ▣ Sunflower seeds
- ▣ Onions
- ▣ Grains

RDA: 55 micrograms



Vitamin C

- ❑ Powerful and well known antioxidant
- ❑ Found in large amounts in fruits and vegetables



Vitamin C



- ❑ Patrols the watery areas of the body – the bloodstream or the cell's interior.
- ❑ The most abundant water-soluble antioxidant in the body.
- ❑ Of particular note in combating free-radical formation caused by pollution and cigarette smoke.
- ❑ Regenerates the reduced (stable) form of vitamin E to its active form.

Vitamin C



Bell Pepper, Red	175 mg
Broccoli	82 mg
Brussels sprouts, cooked	97 mg
Cantaloupe	68 mg
Guava	303 mg
Orange (1 medium)	59 mg
Orange juice	124 mg
Strawberries	82 mg



RDA : 60 mg



Phytochemicals

- **Cruciferous Vegetables**
- **Allium Vegetables**

Phytochemicals

- ❑ “Phyto” comes from the Greek word “phyton”, which means “plant”, so phytochemicals are simply natural chemicals found in plants.
- ❑ These food chemicals are not found in any animal products.
- ❑ There may be 10,000 different kinds.



Cruciferous Vegetables



- ❑ Arugula
- ❑ Beet Greens
- ❑ Bok Choy
- ❑ Broccoli
- ❑ Brussels Sprouts
- ❑ Cabbage
- ❑ Cauliflower
- ❑ Collard Greens
- ❑ Horseradish
- ❑ Kale
- ❑ Kohlrabi
- ❑ Mustard Greens
- ❑ Radishes
- ❑ Rutabaga
- ❑ Swiss chard
- ❑ Turnips
- ❑ Turnip Greens
- ❑ Watercress

Benefits of Cruciferous Vegetables



- ❑ Lower cancer risks.
- ❑ Stop the growth of cancer cells for tumors in the breast, uterine lining (endometrium), lung, colon, liver, and cervix according to the American Institute for Cancer Research.
- ❑ Lower the risk of prostate cancer.
- ❑ Cruciferous vegetables also affect the hormones that influence the progression of hormone-dependent cancers such as breast cancer. In particular, these vegetables actually change the way estrogens are broken down and eliminated.

Standard American Diet
(Regular diet)



Diet Containing Cruciferous
Vegetables
(Indole-3-carbinol)



Estradiol
potent estrogen in
woman

16-alfa-hydroxyestrone

2-hydroxyestrone

Encourages Growth of Cancer cells

Anticancer Action

- In one study the cruciferous extract indole-3-carbinol was given to women with abnormal cervical cells (the type of cells gynecologists check for on Pap smears). After 12 weeks, the abnormal cells had disappeared in half the treated patients, while the patients given a placebo preparation showed no improvement.



Bell MC, Crowley-Nowick P, Bradlow HL, et al. Placebo-controlled trial of indole-3-carbinol in the treatment of CIN. *Gynecol Oncol* 2000; 78:123-9

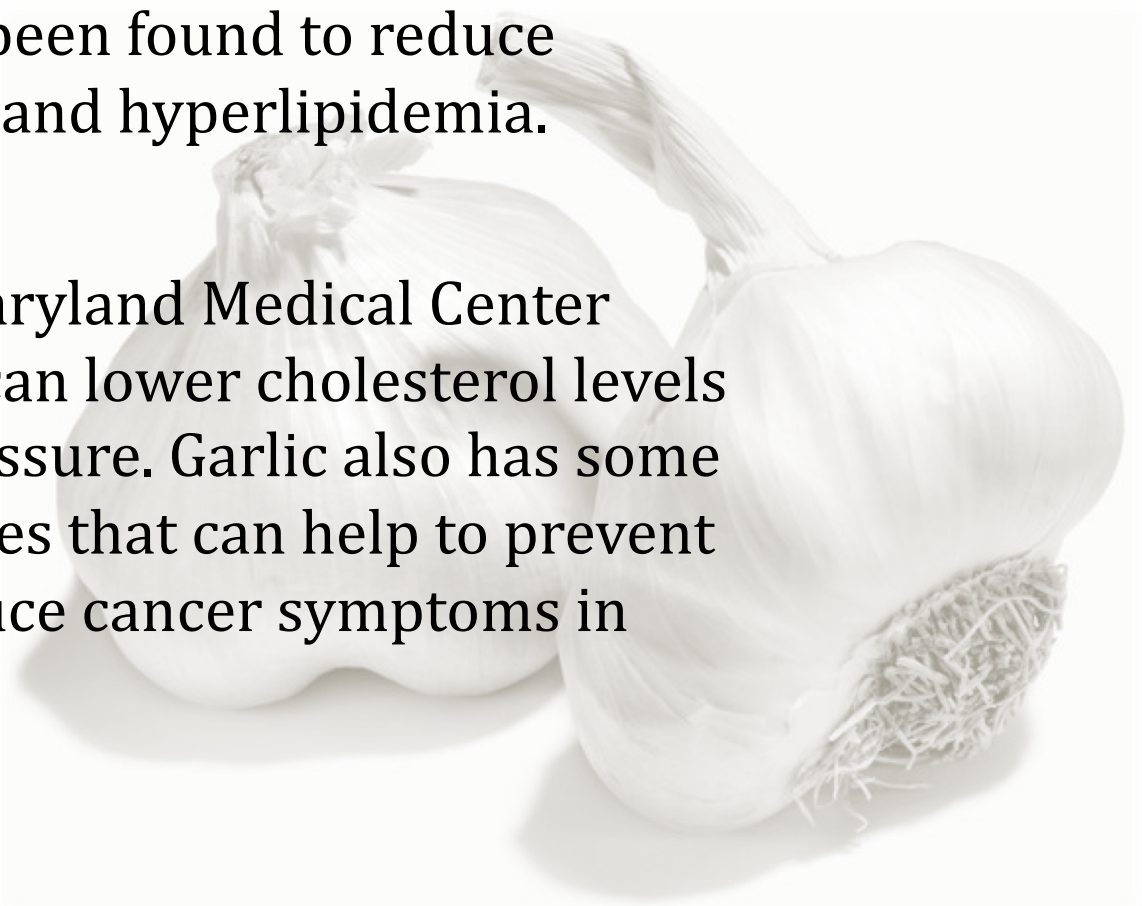
Allium Family

- ❑ Chives
- ❑ Garlic
- ❑ Leeks
- ❑ Onions
- ❑ Scallions
- ❑ Shallots



Garlic

- ❑ *Allium sativum* has been found to reduce platelet aggregation and hyperlipidemia.
- ❑ The University of Maryland Medical Center explains that garlic can lower cholesterol levels and lower blood pressure. Garlic also has some anti-cancer properties that can help to prevent cancer and also reduce cancer symptoms in cancer patients.



Garlic

- ❑ Benefits known for centuries. “Even the Greeks would feed garlic to their athletes before they competed in the Olympic games.”
- ❑ Dr. Kraus recommends 5-12 garlic’s per day with your meals (fennel seeds help to neutralize the smell).
- ❑ To maximize the health benefits, you should crush the garlic at room temperature and allow it to sit for about 15 minutes. That triggers an enzyme reaction that boosts the healthy compounds in garlic.



What about supplements?

- ❑ Studies were conducted to test beta-carotene cancer fighting-power in smokers.
- ❑ Those whose diets were high in beta-carotene had a measure of protection, but those who got beta-carotene from supplements were actually more likely to develop cancer than were the other smokers.



- Since supplements deliver high doses of only one antioxidant, they interfere with the absorption of others.
- Vegetables and fruits that are rich in beta-carotene are also loaded with hundreds of other antioxidants, vitamins, minerals and other protective compounds.



It's estimated that a single tomato has...

...over 10,000 different phytochemicals in it.

What supplement can compete with this?

Lowry, (R.D.) Eve; *Phytochemicals* lecture script, NutriVisuals, Shingle Springs, CA, 1997



What about supplements?

- As with most things - and especially things that come in pills and bottles - too much of a good thing, can be a bad thing.



Ludington, Aileen, and Diehl, Hans; 2000,
Health Power, Review and Herald
Publishing, Hagerstown, Maryland, p. 136

What about supplements?

- Besides this, most nutritionists agree that supplements **cannot** provide the same protection as eating the natural foods themselves.



Cooking Effects

Cooking can destroy some of these phytochemicals, but it can also enhance others, so it is important to eat a mix of raw and cooked vegetables.

www.livestrong.com



Cooking Methods

Best way:

- Steaming, rather than boiling, helps retain water-soluble B and C vitamins.
- Keep cooking time to a minimum.

Things that effect:

- High cooking temperatures
- Long cooking times destroy heat-sensitive nutrients such as B and C vitamins and folate.



Benefits of Juicing

When a fruit or vegetable is juiced, you receive a very concentrated form of vitamins, minerals and antioxidants, more than the average person tends to consume having a piece of fruit or one serving of a vegetable.

<http://www.livestrong.com>



Your Resolution

Aim for at least nine servings (at least 4½ cups) of vegetables and fruits a day. Go for a variety of kinds and colors of produce to give your body the mix of nutrients it needs: dark leafy greens, cooked tomatoes, and anything that's a rich yellow, orange, or red color.

www.mayoclinic.com



God's plan

“The Lord intends to bring His people back to live upon simple fruits, vegetables, and grains. . . . God provided fruit in its natural state for our first parents.”

Counsels On Diet and Foods, p. 81.4





And God said...

Behold, I have given you every herb bearing seed, which is upon the face of all the earth, and every tree, in the which is the fruit of a tree yielding seed; to you it shall be for meat. Gen. 1:29

THE CHOICE IS YOURS



“Choose life that both you and your seed may live.”

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